



APPENDIX 12

Amendment in Response to Office Action mailed July 18, 2000,
in U.S. Serial No.09/288,943 filed April 09, 1999,
adding new claim 41, which was a continuation of Claim 1 of
U.S. Serial No.08/892,738 filed July 15, 1997.

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PATENT

THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Steve Ingistov

Serial No.: 09/288,943

Filed: 04/09/99

Group: 3745

Examiner: Kwon

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Assistant Commissioner for Patents, Washington, DC 20231 on

(Date of Deposit)

F. Lindsey Scott

Title: TURBINE POWER PLANT HAVING MINIMAL-CONTACT BRUSH SEAL AUGMENTED LABYRINTH SEAL

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

AMENDMENT

In response to the office action mailed July 18, 2000 wherein applicant's claims 32 through 40 were rejected under 35 USC 135 (b) please consider the following amendments and comments.

In the claims please add new claim 41 as follows.

41. A stationary gas turbine engine for a power plant, comprising:

(a) a multistage axial compressor, the compressor having a rotor, the rotor having a cylindrical land region downstream of a last-stage of the compressor, the land region having an outside diameter D;

(b) a turbine shaft-coupled to the rotor of the compressor;

(c) a combustor fluid coupled between the compressor and the turbine;

(d) a stationary inner barrel member downstream of the compressor, air flowing from the compressor to the combustor passing outside of the inner barrel member, a

considered to be allowable as to form. Subsequently, U.S. Serial No. 08/656,564 was abandoned and re-filed as U.S. Serial No. 08/892,738. Claim 1 or a claim claiming substantially the same invention as Claim 1 was present in this case through out its prosecution. An abbreviated copy of the prosecution history is presented below and attached,

Appendix A - Original Claims filed in U.S. Serial No. 08/656,564 May 31, 1996.

Appendix B - The Notice of Allowance issued in U.S. Serial No. 08/656,564 indicating all claims allowable.

Appendix C - A Preliminary Amendment filed in U.S. Serial No. 08/892,738.

Appendix D - A second Preliminary Amendment filed in U.S. Serial No. 08/892,738.

Appendix E - A third Preliminary Amendment filed in U.S. Serial No. 08/892,738.

Appendix F - An Office Action issued June 4, 1998 in U.S. Serial No. 08/892,738.

Appendix G - An Responsive Amendment to the June 4, 1998 Office Action filed January 11, 1999.

Appendix H - An Office Action in U.S. Serial No. 08/892,738 issued January 21, 1999 and February 16, 1999.

Appendix I - A Responsive Amendment to the Office Action issued January 21, 1999 and February 16, 1999 which was filed March 30, 1999.

Appendix J - A Notice of Allowance of U.S. Serial No. 08/892,738.

It will be noted that throughout the entire prosecution of this case Claim 1 or a slightly amended version thereof which is substantially equivalent to Claim 1 has been present in the case until cancellation of Claim 1 in U.S. Serial No. 08/892,738. The claims cancelled in U.S. Serial No. 08/892,738 did not include the features related to the admission of cooling air in addition to that passing the brush seal into the barrel of the turbine engine. These cancelled Claims were of course included in U.S. Serial No. 09/288,943 filed April 9, 1999, a continuation of U.S. Serial No. 08/656,564, as filed. U.S. Serial No. 08/288,943 is of course, entitled to the filing date of U.S. Serial No. 08/656,564 which included Claim 1. All claims except those copied from U.S. Patent 5,630,590 were canceled in U.S. Serial No. 09/288,943 in an amendment filed April 13, 2000 under the belief, based upon telephone conversations with the Examiner that cancellation of these claims would expedite declaration of the interference since it deleted all Claims except those copied from U.S. Patent 5,630,590. To show support for this proposed count as proposed in applicants' earlier filed Amendment Applicant attached a Claim chart showing supporting disclosure material for the proposed count by reference to Applicant's issued Patent 5,961,279. This amendment was made with the understanding that this would simplify the issues related to form with respect to Claims 21 through 31 and would result in early declaration of the interference.

As discussed with Examiner Kwon repeatedly, Applicant's believe that the invention Claimed in U.S. Patent 5,630,590 was derived from Applicant, that applicant was the first inventor of that invention and that the now patentee in the U.S. Patent 5,630,590 is commercializing this invention extremely profitably while Applicant remains unable to obtain a determination of his rights in the Patent Office.

It is respectfully submitted that in the present application, applicant is entitled to make the claim presently added as new claim 41 and that this claim was pending before the patent office during the time that U.S. Patent 5,630,590 was pending before the Patent Office. The Patent

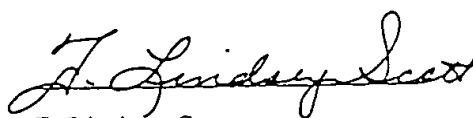
Office could have declared a interference between these two patents at any time during the co-pendency of U.S. Serial Number 08/654,564 filed May 31, 1966 and indicated allowable April 15, 1997 and U.S. Serial No. 08/625,427 filed March 26, 1996 (Now U.S. Patent 5,630,590) under 35 CFR 1.601 (n) and 37 CFR 1.609 (MPEP 2303 last paragraph) or 37 CFR 1.605. It is believed clear that with the material supplied by applicant's earlier amendment filed in U.S. Serial No. 08/288,943 and this demonstration that a claim for substantially the same matter as claimed in U.S. Patent 5,630,590 was pending before the Patent Office prior to the expiration of the one year period after the issuance of U.S. Patent 5,630,590. If necessary applicant can prepare a claim chart showing support for the proposed count based upon Claim 1 but it is considered that it is self-evident from a review of claim 1 that applicant fully supports and has claimed since May 31, 1996 substantially the same invention as claimed in U.S. Patent 5,630,590. Since it appears that there is no doubt that this claim has been pending on behalf of applicants since May 31, 1996 in substantially the same form it appears clear that there is no reason why an interference should not be declared between application 09/288,943 and U.S. Patent 5,630,590. Applicant respectfully requests a prompt and favorable resolution in this matter.

Applicants consider an "intercomponent gap" and a gap of 0.015 percent of the diameter "D" to be of no patentable significance and substantially equivalent especially since the '590 Patent claim 1 refers to an intercomponent gap between a first and a second component and requires that the brush seal impedes the leakage of air through the intercomponent gap. The 0.015 percent gap is between the inner ends of the brush seal and the inner component. The '590 claim 1 does not define this gap. Similarly any distinction between a "refurbished gas turbine engine" and stationary gas "turbine engine" is believed to be of no significance in view of the discussion in applicant's specification at col 5 line 66 - col 6 line 8 which discusses addition of a brush seal to an existing machine (refurbished) or to a "fresh" installation.

Since it is believed that an interference is proper between this patent and this application it is respectfully requested that this interference be declared promptly so that applicant can establish applicant's rights with respect to this invention. Attention is respectfully directed to the last paragraph of MPEP 2307 and 37CFR 1.607 and it is noted that this application has now been pending since April 9, 1999 notwithstanding Applicant's repeated requests for prompt handling.

Since it is believed that an interference is proper between this patent and this application it is respectfully requested that this interference be declared promptly so that applicant can establish applicant's rights with respect to this invention.

Respectfully submitted,



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APPENDIX L

CLAIM CHART
U.S. PATENT 5,630,590 / USSN 09/288,943

USP 5,630,590	USSN 09/288,943 (USP 5,961,279)
<p>1. A refurbished gas turbine engine component having at least one knife edge seal for inhibiting air leakage through an intercomponent gap between the component and a second component, the refurbished component characterized by:</p> <p style="padding-left: 40px;">a brush seal mounted on the refurbished component in tandem with the knife edge seal, the bristles of the brush seal extending toward the second component for impeding the leakage of air through the intercomponent gap.</p>	<p>FIG. 1 & FIG. 2 Col. 1, line 66 - Col. 2, line 24 Col. 4, line 6-27 Col. 5, line 8 - Col. 6, line 8</p>
<p>2. The refurbished component of claim 1 characterized in that the component comprises two component segments, the brush seal is also segmented and the brush seal segments are mounted in a circumferentially extending groove so that the seal is installable and removable by separating the component segments and sliding the brush seal segments circumferentially in the groove.</p>	<p>FIG. 1 & FIG. 2 Col. 1, line 66 - Col. 2, line 24 Col. 4, line 6-37 Col. 5, line 8 - Col. 6, line 8 Col. 5, line 19-26 Col. 6, line 6-7</p>
USP 5,630,590	USSN 09/288,943 (USP 5,961,279)
<p>3. A method of improving the air sealing effectiveness between a rotating component and a nonrotating component in a turbine engine, the rotating and nonrotating components being separated by a gap with knife edge seals extending across the gap to inhibit leakage of air therethrough, the method characterized by:</p>	<p>FIG. 1 & FIG. 2 Col. 1, line 66 - Col. 2, line 24 Col. 4, line 6-27 Col. 5, line 8 - Col. 6, line 8</p>

<p>providing a brush seal; reconfiguring the nonrotating component to provide means for receiving and retaining the brush seal in tandem with the knife edge seals; and installing the brush seal so that the seal bristles extend toward the rotating component to impede the flow of air through the gap, the brush seal being retained by the receiving and retaining means.</p>	
<p>4. The method of claim 3 wherein the nonrotating component is hollow and substantially cylindrical and has a wall thickness and a face, the method characterized in that the step of reconfiguring the nonrotating component includes: creating a capture slot in the face of the nonrotating component for radially retaining the brush seal; and attaching a retainer to the nonrotating component so that the retainer cooperates with the face to axially trap the brush seal.</p>	<p>FIG. 1 & FIG. 2 Col. 1, line 66 - Col. 2, line 24 Col. 4, line 6-27 Col. 5, line 8 - Col. 6, line 8 Col. 4, lines 6-27 Col. 5, line 19-26 Col. 5, line 66 - Col. 7, line 8</p>
<p>5. The method of claim 4 characterized in that the reconfiguring step includes reducing the wall thickness by a predefined amount in the vicinity of the face to form a seal seat and accommodate the radial dimension of the brush seal.</p>	<p>FIG. 1 & FIG. 2 Col. 1, line 66 - Col. 2, line 24 Col. 4, line 6-27 Col. 5, line 8 - Col. 6, line 8 Col. 5, line 19-26 FIG. 4 & FIG. 5 Col. 5, line 8-26</p>
<p>USP 5,630,590</p>	<p>USSN 09/288,943 (USP 5,961,279)</p>
<p>6. The method of claim 4 characterized in that the reconfiguring step regulates the axial length of the nonrotating component.</p>	<p>FIG. 1 & FIG. 2 Col. 1, line 66 - Col. 2, line 24 Col. 4, line 6-27 Col. 5, line 8 - Col. 6, line 8 Col. 5, line 19-26 FIG. 4 & FIG. 5 re dimension C before and after brush seal installation.</p>

7. The method of claim 3 wherein the brush seal is a multilayered brush seal.	Obvious variation
8. The method of claim 3 wherein the nonrotating component comprises upper and lower component segments each component segment subtending approximately 180 degrees of arc, the retainer also comprises upper and lower retainer segments, each retainer segment subtending approximately 180 degrees of arc, and the brush seal comprises an upper brush seal segment subtending approximately 180 degrees of arc and one or more lower brush seal segments, the lower brush seal segments collectively subtending approximately 180 degrees of arc.	FIG. 1 & FIG. 2 Col. 1, line 66 - Col. 2, line 24 Col. 4, line 6-38 Col. 5, line 8 - Col. 6, line 8
USP 5,630,590	USSN 09/288,943 (USP 5,961,279)
9. A method of improving the air sealing effectiveness between a rotating component and a nonrotating component in a turbine engine, the nonrotating component being hollow and substantially cylindrical and having a wall thickness and a face, the rotating and nonrotating components being separated by a gap with knife edge seals extending across the gap to inhibit leakage of air therethrough, the method characterized by: reconfiguring the nonrotating component by reducing its axial length by a predetermined amount and reducing its wall thickness in the vicinity of the face by a predefined amount whereby a seal seat is formed; creating an axially and circumferentially extending capture slot in the face of the nonrotating component; attaching a retainer to the face so that the retainer cooperates with the face and the seal seat to define a circumferentially extending groove; and	FIG. 1 & FIG. 2 Col. 1, line 66 - Col. 2, line 24 Col. 4, line 6-27 Col. 5, line 8 - Col. 6, line 8 Col. 5, line 19-26 FIG. 4 & FIG. 5 re dimension C before and after brush seal installation. Col. 2, line 15-20 Col. 5, line 19-26

<p>installing a brush seal in the groove so that the bristles of the seal extend toward the rotating component to impede the flow of air through the gap;</p> <p>the brush seal being radially retained by the capture slot and the seal seat and axially retained by the retaining ring and the face.</p>	
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